

***Clostridium difficile* in the genital tract**

Sir,  
Recent studies of anaerobic bacteria in both the male and female genital tracts have included techniques for the isolation of *Clostridium difficile*.<sup>1-3</sup> Hafiz *et al* isolated *Cl difficile* from 71% of vaginal specimens from patients attending a sexually transmitted disease (STD) clinic and 18% of women attending a family planning clinic, and from all of 42 men with non-specific urethritis (NSU).<sup>4</sup>

The results of more recent studies have been contradictory. *Cl difficile* was isolated from only two out of 79 patients with balanoposthitis, and not at all from 24 men with NSU, 19 men with both NSU and balanoposthitis, or from 28 asymptomatic controls.<sup>2</sup> Moreover, Moss failed to isolate *Cl difficile* from 20 men and 34 women attending an STD clinic.<sup>1</sup> A vaginal carriage rate of 11% in consecutive female patients attending an STD clinic and 18% in pregnant women was reported by O'Farrell *et al* using a selective broth medium.<sup>3</sup> In this laboratory 206 vaginal swabs from 187 women, and urethral swabs from 20 men attending a special clinic were examined for *Cl difficile*. Swabs were broken off into cooked meat broth and incubated at 37°C for five days before subculture on to modified CCFA medium,<sup>5,6</sup> but *Cl difficile* was not isolated from any specimen.

There exists an apparent dichotomy between the high carriage rates observed in both symptomatic and asymptomatic populations,<sup>3,4</sup> and the negligible isolation rates encountered in this and other laboratories.<sup>1,2</sup> This discrepancy might be explained by the use of isolation techniques of differing sensitivities, but the methods of Moss<sup>1</sup> and Masfari *et al*<sup>2</sup> were essentially similar to those employed by Hafiz *et al*,<sup>4</sup> and all recent investigations including the present one used enrichment culture and a highly efficient selective medium. The existence of a geographical variation in urogenital carriage of *Cl difficile* remains a possibility and requires further study.

Yours faithfully,

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TO THE EDITOR, *British Journal of Venereal Diseases*

**Case reports of urethritis**

Sir,

We should like to comment on two articles in the February 1984 issue of the journal. We agree with Drs M N H Chowdhury and S S Pareek (pp 56-7) that recovery of group B streptococci from the patient with urethritis and from his wife, in the absence of other identifiable pathogenic micro-organisms, together with the successful response to penicillin, suggest a causal relation. There are, however, several aspects which are not clear. The details of the history of urethritis are insufficient to know whether it was consistent or intermittent in severity. Is it not feasible that the response to treatment was more apparent than real and coincided with a natural remission? A longer follow up period would have been helpful in making this assessment. Both patients were free from symptoms after three weeks (of being seen initially?), but were they free from signs of disease and organisms too? We are not told. Furthermore, an important aspect is the sensitivity of procedures which rule out the possibility of other micro-organisms being implicated. To know that chlamydiae were being isolated in the laboratory from other patients with urethritis or cervicitis at rates consistent with those recorded by workers elsewhere would put the negative result in this case into perspective. In addition, to know that culturing for gonococci was negative would have been helpful, as would assessment of the anaerobic flora. We see nothing wrong in presenting a case report, but when the intention is to

persuade the reader about the aetiology of disease there is a greater onus to set out the data explicitly so that there is an opportunity for making a balanced judgement.

The second article, by Drs D W Spelman and D Bradford (pp 58-9), on urethritis in a patient with agammaglobulinaemia was of particular interest to us because we have previously described genitourinary disease, including non-gonococcal urethritis, in patients with hypogammaglobulinaemia.<sup>1,2</sup> In the case described, it is difficult to resolve the question of whether the improvement in the patient's condition could be attributed to intraurethral instillation of immunoglobulin. Irrigation with saline might have afforded the same symptomatic improvement. Resolution of signs of disease based on quantitative analysis of leukocytes in discharge and urine samples would have been more convincing. Furthermore, it seems unlikely that immunoglobulin, which would remain only transiently in the urethra because of urination, could gain access to paraurethral glands and the prostate where putative pathogens are likely to shelter and then emerge. The administration of doxycycline together with intraurethral immunoglobulin after ureaplasmas were eventually found eliminates any possibility of knowing whether the immunoglobulin was responsible for subsequent ureaplasma negative cultures, unless the ureaplasmas were resistant to tetracycline. It is unfortunate that much of the microbiological investigation in this case came late so that it is impossible to know what micro-organism(s) might have been responsible for the start of disease or for its longevity. Our experience, however, shows that ureaplasmas are able to multiply and attain large numbers ( $\geq 10^8$ ) in the urethra of hypogammaglobulinaemic patients, and to cause urethritis. It will be difficult to resolve the question of whether local irrigation with pooled immunoglobulin is effective in treating this condition because this would entail withholding antibiotics from affected patients. We would not recommend such a trial as ureaplasmas may travel to joints and cause septic arthritis.<sup>3</sup> Some rational basis for local treatment, however, would be the showing that pooled immunoglobulin contains antibody to the strain of organism implicated.

Yours faithfully,

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TO THE EDITOR, *British Journal of Venereal Diseases*

### Survival of *Candida albicans* on fabric after laundering

Sir,  
The prevalence of vulvovaginal candidiasis (thrush) has been rising over a decade in spite of an array of adequate drugs for its treatment. A total of 31 886 cases was reported in England in 1972 compared with 50 954 in 1981.<sup>1</sup> These are only the cases reported by departments of genitourinary medicine. Very many more women in deep distress are treated each year, some several times, in general practice, family planning clinics, and departments of gynaecology. At least 20% of these cases are known to be recurrences.<sup>2</sup>

Predisposing factors are many and varied, but are ill understood. Recurrences by autoinfection, such as from the bowel,<sup>3</sup> from the sex partner,<sup>4</sup> and fomites<sup>5</sup> have been suggested. The fashion among young women to wear tight fitting jeans, nylon tights, and nylon underpants contributes to the establishment and maintenance of a humid minitropical climate for the vulva and introitus. It has been suggested that abandoning nylon tights and pants would be a reasonable means of prevention of recurrences in some patients; the benefits are limited.<sup>6</sup>

It is 236 years since Jean Astruc, then physician to the King of France, reported wrestling with this problem.<sup>7</sup> Like us and others, he declared his belief in multiple causes for thrush. Among these, he mentioned contagion by contact with clothing containing "thrush corpuscles". As the question of fomites has received scant attention in recent years, we decided to investigate.

We wondered if *Candida albicans* could survive on underwear after normal

domestic laundering with modern detergents and designed a simulated laundering process in the laboratory to investigate this. NCPF 3153 (*C. albicans*) and clinical isolates of *C. albicans* were used to inoculate samples of cotton and nylon fabric. Pooled human serum was added to represent any protein present in vaginal discharge. The samples were dried at room temperature for several days before washing with detergent washing powder, rinsing, and drying. *C. albicans* was recovered from both types of fabric after this procedure if the washing temperature was 50°C (manufacturers recommended washing temperature for most items of underwear); but not if a higher temperature (70°C or greater) was used or if the cotton fabric was ironed with a hot iron.

As the latter two procedures were regarded as impractical in the home, we investigated an alternative method of eradicating *C. albicans*. This consisted of soaking the fabric overnight in a 1% solution of the antifungal disinfectant Tego 103G, and then washing in the usual way. *C. albicans* could not be recovered from laboratory infected fabrics after they had been soaked in Tego and washed at 50°C.

Tego shows excellent compatibility with skin, and we think it may form the basis of a safe, acceptable, and effective procedure for patients to use in the home.

A clinical trial is now under way to investigate the survival of *C. albicans* on infected patients' underwear and to assess the effect of soaking undergarments in Tego before laundering on the recurrence rate of vulvovaginal candidiasis.

Yours faithfully,

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### Prepubertal children with condylomata acuminata

Sir,  
The report by M C Baruch *et al* on perianal condylomata acuminata in a male child (*Br J Vener Dis* 1984; **60**:60-1) presents an uncommon but not unique infection. Having transgressed in the past by not carefully reviewing the "foreign" literature, I understand the oversight in this case. Perianal and penile condylomata have been described previously in boys. In a case report and literature review during 1981 we collected 34 cases of condylomata acuminata in prepubertal children including nine boys,<sup>1</sup> five of whom had perianal lesions and four had penile lesions.

Transmission of the human papilloma virus in children may occur in several ways: 1) during parturition in an infected mother, 2) from close non-sexual contact with infected caretakers, and 3) from one or more sexual encounters. As the incubation period after exposure to the virus ranges from one to 20 months (average 2 to 3 months), the mode of transmission in individual cases is often not clear. In 18 of the 34 cases reviewed, the source and mode of transmission were unknown. The evaluation of the child with condylomata acuminata requires a thorough medical and social evaluation to determine whether there is any evidence of sexual abuse or other sexually transmitted diseases, and to establish the source of the virus.

Yours faithfully,

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